

HABITAT ASSESSMENT

Applicability

This section primarily applies to new or expanding marinas where site changes may affect important near-shore or riverine habitats. Habitat assessment is typically addressed through the permitting process in Indiana. However, this section does provide marina designers and developers some guidance on marina siting and design impacts on aquatic habitats.

Background

Construction of new marinas or expanding marinas can have an adverse impact on aquatic habitats. For example, Lake Michigan and its tributaries support a wide variety of fish and wildlife that depend on near-shore or riverine habitats to successfully maintain their populations. Many of the sport-fish that are so dearly prized on Lake Michigan (yellow perch, smallmouth bass, trout and salmon to name a few) use shoreline habitat for spawning, nurseries, feeding and cover throughout the year. Endangered species such as the Blanding's turtle, swamp rabbit, trumpeter swan, piping plover, hellbender and mudpuppy have historically been known to inhabit Lake Michigan and the nearby waterways.



The Blanding's turtle is an endangered species in Indiana (Source: IDNR).

When marinas are designed with consideration of habitat in mind, they can be an asset instead of a detriment to the ecosystem. They can allow for quiet, sheltered waters. A marina can assist in replacing natural habitat that allows for feeding and spawning. Pollution prevention measures taken by the marina will help maintain or even improve water and habitat quality leading to a more aesthetically pleasing marina.

Existing Federal and State Laws

As part of the permitting process, IDEM reviews potential water quality impacts for newly proposed or expanding marinas through the 401 Water Quality Certification Program. The Indiana Department of Natural Resources also reviews the potential impacts of newly proposed or expanding marinas through the Navigable Waterways Act (IC 14-29-1), the Lake Preservation Act (IC 14-26-2), the Sand and Gravel Permits Act (IC 14-29-3), and the Construction of

HABITAT ASSESSMENT

Channels Act (IC 14-29-4). The U.S. Army Corps of Engineers utilize Section 10 of the River and Harbor Act of 1899 and Section 404 (permit application process) of the Clean Water Act to determine the impacts of proposed marinas. The U.S. Fish and Wildlife Service reviews proposed marinas for potential impacts to fish and wildlife habitat and endangered species present at or near the proposed project site under the Endangered Species Act and the Fish and Wildlife Conservation Act.

Best Management Practices

U.S. EPA has provided several best management practices that can be applied successfully to protect valuable near-shore and riverine habitats during marina siting and design. The following best management practices are described for illustrative purposes and to provide guidance to developers that are in the planning stage or for those marinas that will be expanding.

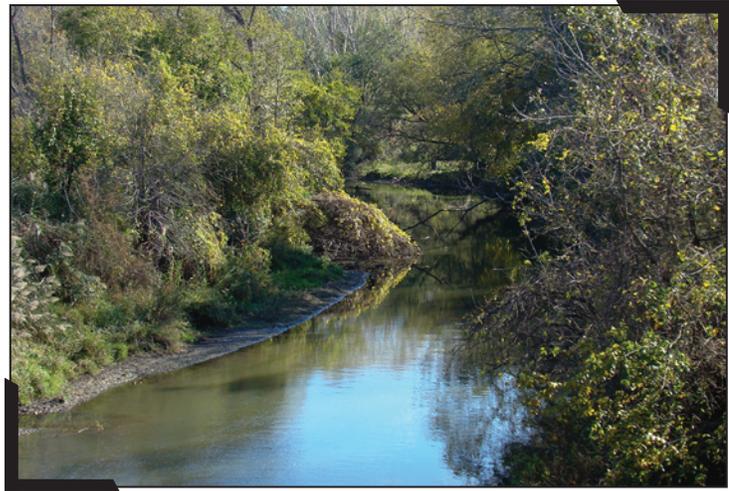
- Conduct habitat surveys to characterize the potential marina project site. Critical or unique habitats need to be identified. Disruption of behavior such as spawning and feeding need to be considered. The risk of infiltration of exotic species from boating activities or removal of vegetation is important to consider. Once the data is assembled, it becomes possible to identify environmental risks associated with development of the site. Through site-design modifications, preservation of critical or unique habitat, and biological/chemical/physical monitoring, it is possible to minimize the direct and indirect impacts associated with a specific waterfront development.
- Redevelop coastal waterfront sites that have been previously disturbed, such as brownfields (sites that have been used by industry), expand existing marinas, or consider alternative sites to minimize potential environmental impacts.



The Hammond Marina located on Indiana's Lake Michigan shoreline was built in 1991 on a former Brownfield site. The shoreline consisted of steel slag. The 54-acre complex was carved out of the steel mill slag and the shoreline was created from dredged sand, which created a mile-long sandy beach (Source: Hammond Marina).

HABITAT ASSESSMENT

- Assess historic habitat function (e.g., spawning area, nursery area, migration pathway) considering seasonal use by fish or other animals and use this information when designing the marina to minimize indirect impacts.
- Minimize disturbance to indigenous vegetation in riparian areas. Riparian areas are narrow areas along the banks of rivers, streams, lakes, ponds, reservoirs, and wetlands. They may have vegetation, or may just be sandy or rocky. These riparian areas help filter pollutants from the water and offer a high biodiversity and biomass due to the nutrients that absorb from the run-off water that passes through them.
- Create new habitats or expand habitats in the marina basin. The addition of rock or the planting of native plant species on the shoreline can create new areas for feeding and spawning.



This riparian corridor is along Trail Creek in LaPorte County (Photo by Alan Walus, Sanitary District of Michigan City).



Dry stack storage promotes pollution prevention.

- Consider building in dry stack storage that enables boaters to store their boats on land. This practice promotes pollution prevention by decreasing the possibility of anti-fouling paint flaking or leaching into the water and the chance of oil/gasoline leaking into the water. Dry stack storage also allows for more public access to waterways, increases rental units and results in less weathering and maintenance for boats.

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